



Data Quality Assessment - Models

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Session III - F

Purpose

- Review some models of organizations
- Review best practices for data quality
- So that you can conduct self assessments of processes and systems

Premises

- Imposing management controls
- Internal controls
- Control self-assessment
- Governance

Control Self-Assessment (CSA)

- A generic term that covers risk self--assessment (RSA), control and risk self-assessment (CRSA), and other processes whereby an organization's personnel evaluate their own risks and controls with the help of facilitators from the internal audit department.
- Assessments can be performed through a series of workshops or meetings or through questionnaires and can be applied to projects, processes, business units, and functions - -basically any area of a company.
- Whatever format is used, the goal is the same: to help organizations assess the likelihood of achieving their business objectives by using the knowledge of the workers responsible for meeting them.

Agenda

- COSO Internal Control Model
- **COBIT®**
- Weibord's Six-Box Model
- Data quality attributes

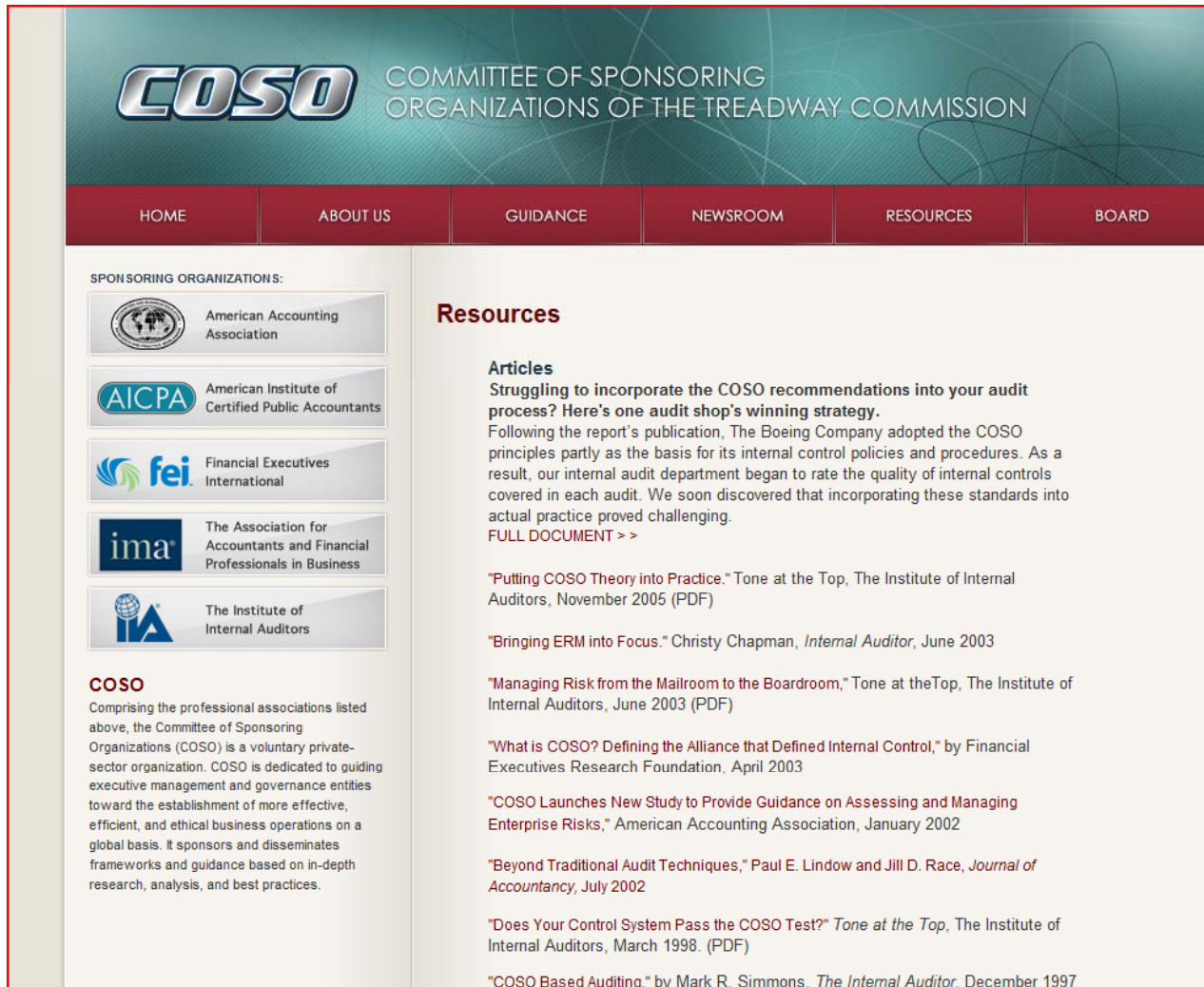
What is COSO?

- Control environment
- Risk assessment
- Control activities
- Information and communication
- Monitoring

How might you use it

Component	Evaluation
Control environment	Everyone understands the mission – useable data for decision making
Risk assessment	Monthly risk meeting with “real” participation
Control activities	ECRB to approve changes
Information and communication	Weekly meetings Shared access to documents Weekly review of escalated tickets
Monitoring	Monthly PIMS performance measures

Resources - Free



The screenshot shows the COSO website. The header features the COSO logo and the text "COMMITTEE OF SPONSORING ORGANIZATIONS OF THE TREADWAY COMMISSION". Below the header is a navigation bar with links: HOME, ABOUT US, GUIDANCE, NEWSROOM, RESOURCES, and BOARD. The main content area is divided into two columns. The left column, titled "SPONSORING ORGANIZATIONS:", lists five organizations with their logos: American Accounting Association, American Institute of Certified Public Accountants (AICPA), Financial Executives International (FEI), The Association for Accountants and Financial Professionals in Business (IMA), and The Institute of Internal Auditors (IIA). Below this list is a section titled "COSO" which describes the organization's mission. The right column is titled "Resources" and contains a section for "Articles". It lists several articles with their titles, authors, and publication dates, including "Struggling to incorporate the COSO recommendations into your audit process?", "Putting COSO Theory into Practice.", "Bringing ERM into Focus.", "Managing Risk from the Mailroom to the Boardroom.", "What is COSO? Defining the Alliance that Defined Internal Control.", "COSO Launches New Study to Provide Guidance on Assessing and Managing Enterprise Risks.", "Beyond Traditional Audit Techniques.", "Does Your Control System Pass the COSO Test?", and "COSO Based Auditing."

COSO
COMMITTEE OF SPONSORING ORGANIZATIONS OF THE TREADWAY COMMISSION

HOME ABOUT US GUIDANCE NEWSROOM RESOURCES BOARD

SPONSORING ORGANIZATIONS:

- American Accounting Association
- AICPA American Institute of Certified Public Accountants
- FEI Financial Executives International
- IMA The Association for Accountants and Financial Professionals in Business
- IIA The Institute of Internal Auditors

COSO
Comprising the professional associations listed above, the Committee of Sponsoring Organizations (COSO) is a voluntary private-sector organization. COSO is dedicated to guiding executive management and governance entities toward the establishment of more effective, efficient, and ethical business operations on a global basis. It sponsors and disseminates frameworks and guidance based on in-depth research, analysis, and best practices.

Resources

Articles

Struggling to incorporate the COSO recommendations into your audit process? Here's one audit shop's winning strategy.
Following the report's publication, The Boeing Company adopted the COSO principles partly as the basis for its internal control policies and procedures. As a result, our internal audit department began to rate the quality of internal controls covered in each audit. We soon discovered that incorporating these standards into actual practice proved challenging.
[FULL DOCUMENT >>](#)

"Putting COSO Theory into Practice," Tone at the Top, The Institute of Internal Auditors, November 2005 (PDF)

"Bringing ERM into Focus," Christy Chapman, *Internal Auditor*, June 2003

"Managing Risk from the Mailroom to the Boardroom," Tone at the Top, The Institute of Internal Auditors, June 2003 (PDF)

"What is COSO? Defining the Alliance that Defined Internal Control," by Financial Executives Research Foundation, April 2003

"COSO Launches New Study to Provide Guidance on Assessing and Managing Enterprise Risks," American Accounting Association, January 2002

"Beyond Traditional Audit Techniques," Paul E. Lindow and Jill D. Race, *Journal of Accountancy*, July 2002

"Does Your Control System Pass the COSO Test?" *Tone at the Top*, The Institute of Internal Auditors, March 1998. (PDF)

"COSO Based Auditing," by Mark R. Simmons, *The Internal Auditor*, December 1997

Resources - Free

TONE at the TOP

COSO Checklist: Is Your Organization's Internal Control Effective?

1. How Do the Board of Directors and Management Establish and Maintain a Strong Ethical Environment and Culture?


◆◆◆ The control environment sets the tone of an organization and provides the foundation for an effective system of internal controls.

- ☐ Do board members and senior executives set a day-in, day-out example of high integrity and ethical behavior?
- ☐ Is there a written code of conduct for employees, and is it reinforced by training, top-down communications, and requirements for periodic written statements of compliance from key employees?
- ☐ Are performance and incentive compensation targets reasonable and realistic, or do they create undue pressure on achievement of short-term results?
- ☐ Is it clear that any fraudulent financial reporting will not be tolerated?
- ☐ Are ethics woven into criteria that are used to evaluate individual and business unit performance?
- ☐ Does management react appropriately when receiving bad news from subordinates and business units?
- ☐ Does a process exist to resolve close ethical calls?
- ☐ Are business risks identified and candidly discussed?

3. How Does the Organization Assess Its Internal Control System To Ascertain That It Is Effective?

◆◆◆ Internal controls should be monitored by line management on an ongoing basis and subject to periodic evaluation.

- ☐ Do senior and line management executives demonstrate that they accept control responsibility rather than just delegate that responsibility to financial and audit staff?
- ☐ Does management routinely monitor controls in the process of running the organization's operations?
- ☐ Does management clearly assign responsibilities for training and monitoring of internal controls?
- ☐ Are periodic, systematic evaluations of control systems conducted and documented?
- ☐ Are such evaluations carried out by personnel with appropriate responsibilities, business experience, and knowledge of the organization's affairs?





Resources - Free



The screenshot shows the GAO (U.S. Government Accountability Office) website. The header includes the GAO logo, navigation links for 'About GAO' and 'Contact GAO', and a search bar. Below the header is a menu with links to 'Reports & Testimonies', 'Legal Decisions', 'Comptroller General', 'Topic Collections', 'Careers', 'FraudNet/Reporting Fraud', and 'Multimedia'. The main content area features the title 'Standards for Internal Control in the Federal Government (Supersedes AIMD-98-21.3.1)' in blue. Below the title, it states 'AIMD-00-21.3.1 November 1, 1999' and provides a link to the 'Full Report (PDF, 25 pages)'. A 'Summary' section follows, explaining that the Federal Managers' Financial Integrity Act of 1982 requires GAO to issue standards for internal control in government. It notes that rapid advances in information technology have underscored the need for updated guidance on internal controls over modern computer systems. At the same time, the management of human capital is increasingly recognized as an important part of internal control. Moreover, the private sector has updated its guidance on internal controls. This update, which supersedes GAO's earlier 'Standards for Internal Controls in the Federal Government,' recognizes these three developments. The standards are effective beginning with fiscal year 2000. On the right side of the page, there are links for 'Share' and 'Related Reports'.

GAO
U.S. Government Accountability Office

[About GAO](#) | [Contact GAO](#)

Keyword
Advance

[Reports & Testimonies](#) [Legal Decisions](#) [Comptroller General](#) [Topic Collections](#) [Careers](#) [FraudNet/Reporting Fraud](#) [Multimedia](#)

Standards for Internal Control in the Federal Government (Supersedes AIMD-98-21.3.1)

AIMD-00-21.3.1 November 1, 1999
[Full Report](#) (PDF, 25 pages)

Summary

The Federal Managers' Financial Integrity Act of 1982 requires GAO to issue standards for internal control in government. Rapid advances in information technology have underscored the need for updated guidance on internal controls over modern computer systems. At the same time, the management of human capital is increasingly recognized as an important part of internal control. Moreover, the private sector has updated its guidance on internal controls. This update, which supersedes GAO's earlier "Standards for Internal Controls in the Federal Government," recognizes these three developments. The standards are effective beginning with fiscal year 2000.

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What is COBIT®?

How to achieve business objectives using IT resources (people, applications, technology, facilities, and data)

- Planning
- Implement – Build or acquire
- Delivering services – Supporting the IT systems
- Monitoring

How might you use it?

Planning – Manage IT investment

- Budgets to manage financial resources
- Owner of the budget
- Control spending based on budget
- Cost/benefit justifications
- Alignment with business strategy
- Asset management

How might you use it?

Implementation – Managing changes

- Change request process
- Changes assessed for impact on the system
- Integrated into configuration management
- Automated process to track requests
- Emergency change process
- Documentation updated as part of process

How might you use it?

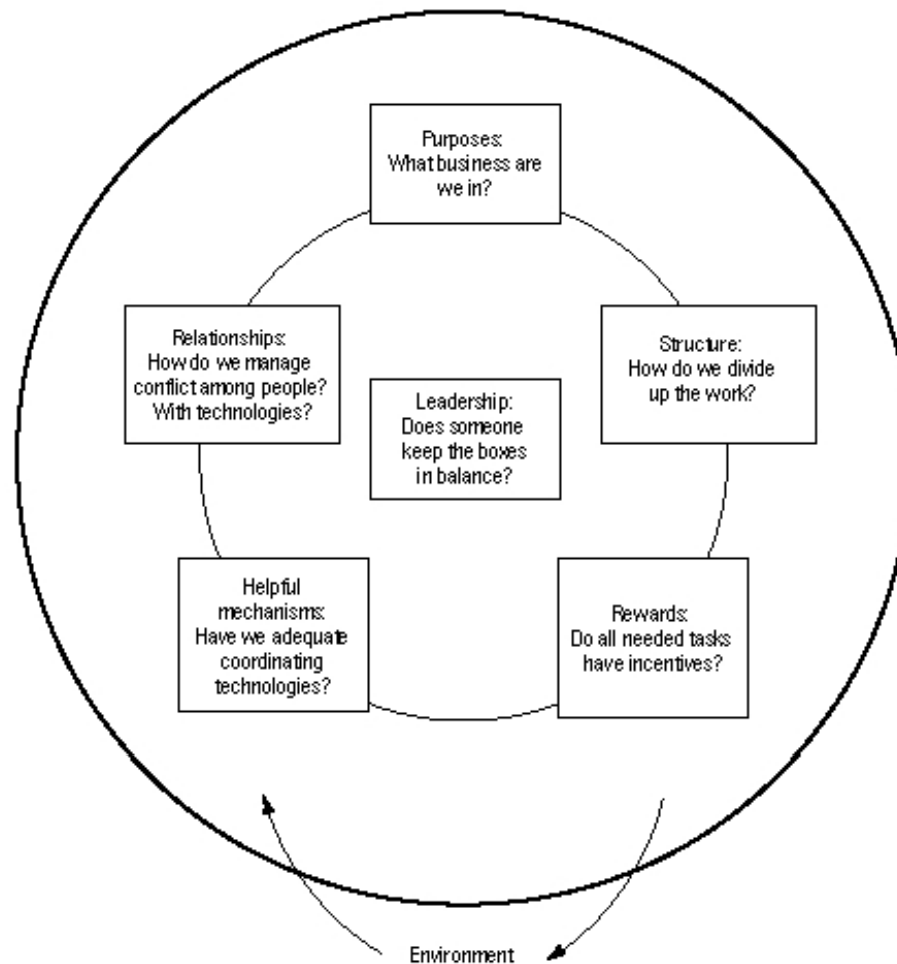
- Process to analysis, implement, and follow-up on all changes requested
- Identification of changes
- Categorize and prioritize
- Impact assessments
- Change authorization
- Release management
- Business process design

Resources – Free and some \$



What is Weisbord's Six-Box Model

Weisbord's Six-Box Organizational Model



How might you use it?

Purpose

- Formal
 - Govern, Acquire, Validate, Improve Usage
- Informal
 - Extent of support and understanding



How might you use it?

- Structure
 - Formal - How is the work organized
 - Informal – What is actually getting done
- Rewards
 - Formal – salary, promotions
 - Informal – growth, recognition

How might you use it?

- Relationships
 - Types
 - People to people
 - People to technology
 - Connections
 - Interdependencies
 - Build in conflicts
 - Conflict management

How might you use it?

Leadership

- Defining purpose
- Embodying the purpose into programs
- Defending institutional integrity
- Managing internal conflict

How might you use it?

Helpful mechanisms

- Formal – What is established?
 - Budget
 - Meetings
 - Records
 - Activities, for example, on-boarding
- Informal – Are they used?

Resources - Free

www.marvinweisbord.com .



EDFacts
Reporting System



Data Quality Assessments - Models

Data quality attributes

1. **Data Profiling** (*determining what we have*)
2. **Data Monitoring** (*communicating what problems we have*)
3. **Data Cleansing** (*fixing the errors we have*)
4. **Resources** (*defining our organizational commitment*)
5. **Data Governance** (*setting the rules*)

Data quality attributes

- 6. Data Stewardship** (*accepting responsibility for the data*)
- 7. Metadata Management** (*managing the data about the data*)
- 8. Data Usage** (*putting the data to work*)
- 9. Data Currency** (*getting the data at the right time*)
- 10. Education** (*teaching everyone about their role in data quality*)

Data quality cornerstones

Data Quality Assessment

Data Profiling
Data Currency

Data Quality Improvement Process

Data Monitoring
Data Cleansing

Metadata Repository

Metadata Management
Data Usage

Data Governance and Transformation Management

Data Governance
Resources
Data Stewardship
Education

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- Assessments can be performed through a series of workshops or meetings or through questionnaires and can be applied to projects, processes, business units, and functions -- basically any area of a company.
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COSO Internal Control Model

- COSO is recognized the world over for providing guidance on critical aspects of organizational governance, business ethics, internal control, enterprise risk management, fraud, and financial reporting.
- www.coso.org
- www.gao.gov
 - Standards for Internal Control in the Federal Government (AIMD-00-21.3.1, November 1, 1999)

COBIT®

- The comprehensive IT governance framework that addresses every aspect of IT and integrates all of the main global IT standards
- [.http://www.isaca.org/Knowledge-Center/cobit/Pages/Downloads.aspx](http://www.isaca.org/Knowledge-Center/cobit/Pages/Downloads.aspx)

Weisbord Six Box Model

- “For several years I’ve experimented with “cognitive maps” of organizations. These are labels that would help me better describe what I saw and heard and understand the relationships among various bits of data. I started this endeavor when I realized that though I knew a lot of organization theory, most theories are either (1) too narrow to include everything I wished to understand, or (2) too broadly abstract to give much guidance.”
- “These notes represent a progress report on my efforts to combine bits of data, theories, research, and hunches into a working tool which anybody can use. For want of a more elegant name, I call this tool the “Six-Box Model.” This model (Fig. 1) has helped me to rapidly expand my diagnostic framework from interpersonal and group issues to the more complicated contexts in which organizations are managed.”
- www.marvinweisbord.com